# Lear Corporation

CASE SUMMARY 14

## LEAR CORPORATION

Iowa City, Iowa
Johnson County


Intern: Ben Hanson
Major: Mechanical Engineering
School: Iowa State University

### The Company

Lear Corporation ranks 131 in the Fortune 500 and has 280 plants in 33 countries with more than 115,000 employees. It is the first company capable of being the sole provider of interior automotive components. Lear Iowa City specializes in the production of armrests, door panels and dashboards for several automakers, and has a history of pollution prevention and recycling programs.

### Project Background

Lear has found outlets for many of its main waste streams including plastic and vinyl. It also has a program in place to reduce and reuse the scrap produced.

### Incentives to Change

Lear Corporation desired to reduce the amount of virgin plastic purchased by altering its production schedule and to reduce paint usage by using more efficient practices. Combined, these would lower Lear's two main costs and reduce its effect on the environment by decreasing emissions and scrap.

### Results

Four main opportunities to reduce waste and lower costs are:

**1. Production Costs Weighed**
A program was created that would weigh all costs of production and determine the optimal number of parts to produce daily to lower costs and reduce waste while still meeting demand. Previously, manufacturing was based on Just-In-Time production, which created a large amount of start-up scrap but virtually no inventory cost.

**2. Paint Training**
Paint training was obtained through the Iowa Waste Reduction Center. Previously, Lear's painters were trained by each other and little control was imposed over the amount of paint used to coat the parts. With proper training and the implementation of mechanical controls, such as flow restrictors, acceptable coats were formed with much less paint.

**3. New Paint Process**
A vinyl electrostatic paint process was designed to greatly increase transfer efficiency, the ratio of the amount of paint covering the part to the amount

used. Lear utilizes robotic arms to paint parts faster and with less paint than human painters. However, the robotic arms still have relatively low transfer efficiencies, leading to a significant amount of emissions and a large production cost. Lear is in the process of creating and implementing the first electrostatic paint line for a vinyl part. Electrostatic painting would increase the efficiency significantly, greatly reducing both cost and emissions.

**4. Grinder and Saw Efficiency**

More efficient use of grinders and saws was implemented to increase the amount of scrap plastic reused. Lear currently reuses a significant amount of scrap plastic by grinding it and then feeding it back into the process. Due to multiple colors and types, not all scrap can be ground, and is instead sold as scrap at a large loss to Lear. By more efficiently using grinders and saws, more product could be reused, hence lowering the amount of new material purchased and lowering the amount of material scrapped.


Project Summary Table

| Project | Material | Amount Saved | Cost Savings |
|---|---|---|---|
| Manufacturing optimization | Plastic | 54.6 tons | $91,500 |
| Paint training | Paint | 2,250 gal | $72,000 |
| Electrostatic painting | Paint | 7,100 gal | $227,200 |
| Grinding | Plastic | 87.4 tons | $123,000 |